

In the Claims

- 1.1.(currently amended) A composition comprising a nano-particle core and a nano-structure
2 formed on an outer surface of the core, where the nano-particle core comprises a first conductive
3 material and the nano-structure comprises a second conductive material, where the first and second
4 conductive materials are the same or different.

2.2.(canceled)
3.3.(canceled)
4.4.(canceled)
5.5.(canceled)
6.6.(canceled)
7.7.(canceled)
8.8.(canceled)
9.9.(canceled)
10.10.(canceled)

11.11.(withdrawn) A composition comprising a nano-particle core and a plurality of nano-rods,
2 where the nano-particle core comprises a first material and the nano-rods comprises a first
3 conductive material.

12.12.(withdrawn) The composition of claim 11, further comprising a nano-shell interposed
2 between the core and the nano-rods, where the nano-shell comprises a second conductive material,
3 where the first and second conductive materials are the same or different.

13.13.(canceled)
14.14.(canceled)
15.15.(canceled)
16.16.(canceled)
17.17.(canceled)
18.18.(canceled)
19.19.(canceled)
20.20.(canceled)
21.21.(canceled)
22.22.(canceled)
23.23.(canceled)
24.24.(canceled)
25.25.(canceled)
26.26.(canceled)
27.27.(canceled)

28.(canceled)
29.(canceled)
30.(canceled)

1 31.(previously presented) The composition of claim 1, wherein the nano-structure is selected
2 from the group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality
3 of nano-rods disposed on a surface of the nano-shell, where the nano-rods comprise a third
4 conductive material, where the first, second and third conductive materials are the same or different.

1 32.(previously presented) The composition of claim 1, wherein the first conductive material
2 comprises a first metal, metal alloy or a conductive polymer and the second conductive material
3 comprises a second metal or metal alloy.

1 33.(currently amended) The composition of claim 31, wherein the first conductive material
2 comprises a first metal, metal alloy or a conductive polymer, the second conductive material
3 comprises a second metal or metal alloy, and the third conductive material comprises a third metal
4 or metal alloy, where the first, second and third metals and/or metal alloys are the same or different.

1 34.(currently amended) The composition of claim 32, wherein the first, second and third
2 metals or metal alloys are the same or different noble metals or metal alloys, where the noble metal
3 are selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium,
4 ruthenium, rhodium, and mixtures or combinations thereof.

1 35.(previously presented) The composition of claim 33, wherein the first, second and third
2 metals or metal alloys are the same or different noble metals or metal alloys, where the noble metal
3 are selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium,
4 ruthenium, rhodium, and mixtures or combinations thereof.

1 36.(currently amended) The composition of +32, wherein the first metal and first metal alloy
2 are selected respectively from the group consisting of non-transition metals, non-transition metal
3 alloys, transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide
4 metals, and actinide metal alloys.

1 37.(currently amended) The composition of 3432, wherein the first second metal and first
2 second metal alloy are selected respectively from the group consisting of non-transition metals, non-
3 transition metal alloys, transition metals, transition metal alloys, lanthanide metals, lanthanide metal
4 alloys, actinide metals, and actinide metal alloys.

1 38.(previously presented) The composition of 1, wherein the nano-structure has a plasmon
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the
3 electromagnetic spectrum.

1 39.(previously presented) The composition of 31, wherein the nano-structure has a plasmon
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the
3 electromagnetic spectrum.

1 40.(withdrawn) A composition comprising a nano-particle core, a nano-structure formed an
2 outer surface of the core and a bio-compatible polymer coating the structure and the core, where the
3 nano-structure is selected from the group consisting of a nano-shell, a plurality of nano-rods and a
4 nano-shell having a plurality of nano-rods disposed on a surface of the nano-shell, where the nano-
5 particle core comprises a first material, the nano-shell comprises a second conductive material, and
6 the nano-rods comprise a third conductive material, where the second and third conductive materials
7 are the same or different.

1 41.(withdrawn) The composition of claim 40, wherein the first material is a non-conductive
2 material, a semi-conductor material or a conductive material.

1 42.(withdrawn) The composition of claim 41, wherein the first conductive material comprises
2 a first metal, metal alloy or a conductive polymer, the second conductive material comprises a
3 second metal or metal alloy, and the third conductive material comprises third metal or metal alloy,
4 where the first, second and third metals and/or metal alloys are the same or different.

1 43.(withdrawn) The composition of claim 42, wherein the first, second and third metals or

2 metal alloys are the same or different noble metals or metal alloys, where the noble metal are
3 selected from the group consisting of gold, silver, platinum, palladium, iridium, osmium, ruthenium,
4 rhodium, and mixtures or combinations thereof.

1 44.(withdrawn) The composition of 41, wherein the first metal and first metal alloy are
2 selected respectively from the group consisting of non-transition metals, non-transition metal alloys,
3 transition metals, transition metal alloys, lanthanide metals, lanthanide metal alloys, actinide metals,
4 and actinide metal alloys.

1 45.(withdrawn) The composition of claim 40, wherein the nano-structure has a plasmon
2 resonance having a frequency range at least a portion of which lies in the near infrared region of the
3 electromagnetic spectrum.

1 46.(withdrawn) A nano-structure drug-delivery composition comprising a nano-particle core,
2 a nano-structure, a bio-compatible polymer coating and a pharmaceutically active agent impregnated
3 into the polymer coating, where the nano-structure is selected from the group consisting of a nano-
4 shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed on a surface
5 of the nano-shell, where the nano-particle core comprises a first material, the nano-shell comprises
6 a second conductive material, and the nano-rods comprise a third conductive material, where the
7 second and third conductive materials are the same or different.

1 47.(withdrawn) A nano-structure drug-delivery composition comprising a nano-particle core,
2 a nano-structure formed on an outer surface of the core, and a pharmaceutically active agent
3 absorbed or attached thereto, where the nano-structure is selected from the group consisting of a
4 nano-shell, a plurality of nano-rods and a nano-shell having a plurality of nano-rods disposed on a
5 surface of the nano-shell, where the nano-particle core comprises a first material, the nano-shell
6 comprises a second conductive material, and the nano-rods comprise a third conductive material,
7 where the second and third conductive materials are the same or different.

1 48.(withdrawn) A method for treating cancers or diseases comprising:
2 administering a composition to an animal including a human and

so that the nano-structures convert the field into thermal energy,

5 where the composition comprises a nano-particle core, a nano-structure formed an outer
6 surface of the core and a bio-compatible polymer coating the structure and the core or a
7 pharmaceutically active agent absorbed or attached thereto, where the nano-structure is selected from
8 the group consisting of a nano-shell, a plurality of nano-rods and a nano-shell having a plurality of
9 nano-rods disposed on a surface of the nano-shell, where the nano-particle core comprises a first
10 material, the nano-shell comprises a second conductive material, and the nano-rods comprise a third
11 conductive material, where the second and third conductive materials are the same or different.